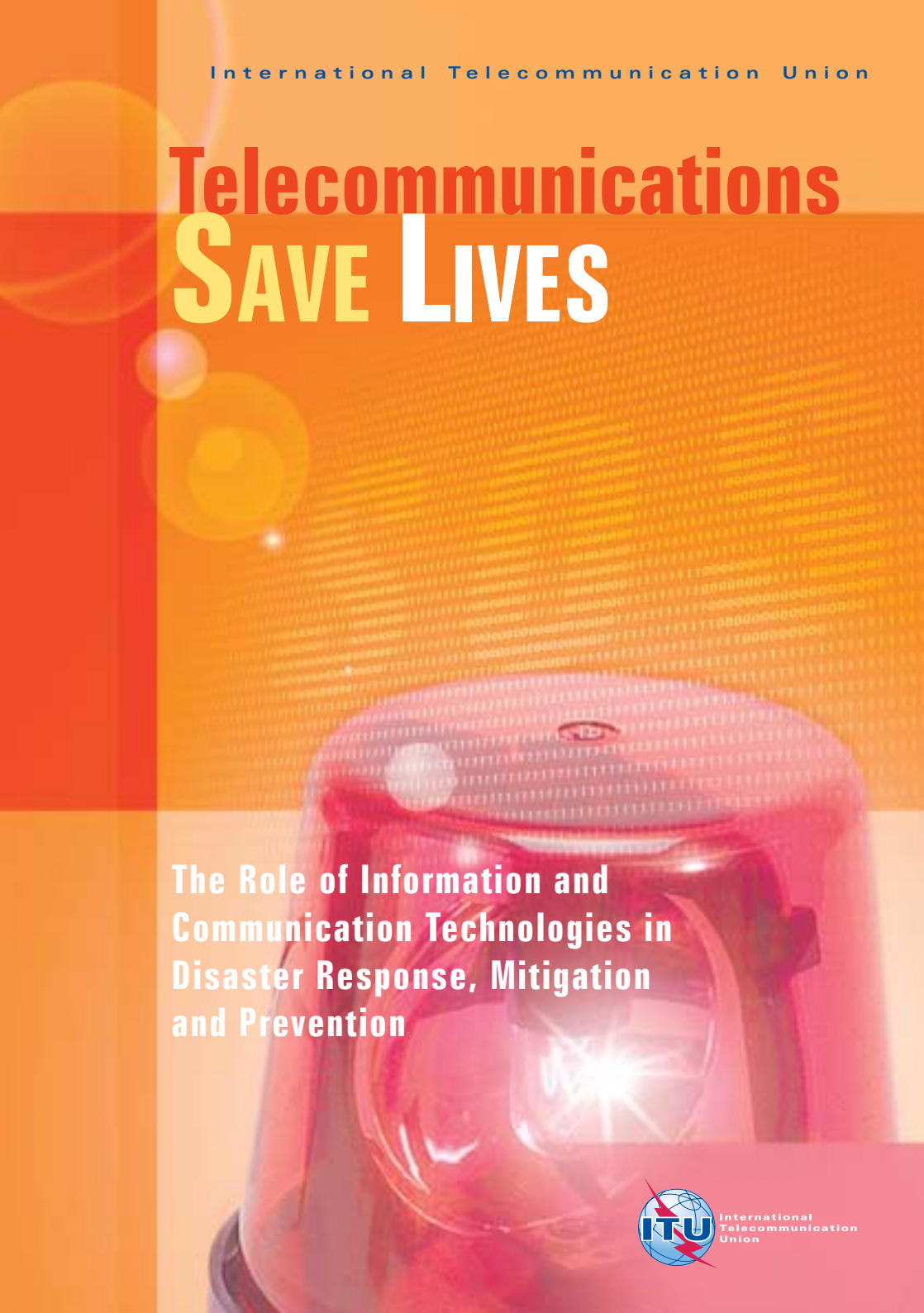
International Telecommunication Union

Telecommunications Save Lives

The Role of Information and Communication Technologies in Disaster Response, Mitigation and Prevention



International Telecommunication Union

Telecommunications Save Lives

Earthquake in Mexico
Source: Actualités Suisse.

Gas escaping from a broken pipe burns as water from a ruptured main floods a Los Angeles street after an earthquake
Source: L. Ignelzi.

Forest fire in South Africa
Source: Actualités Suisse.

Disasters kill at least one million people each decade and leave millions more homeless.

When disaster strikes, communication links are often disrupted; yet for disaster relief workers, these links are essential in order to answer critical questions as to how many people have been injured or died, where the injured are located and the extent of the medical help needed. To put it simply, in disaster and emergency situations, telecommunications can save lives.

The International Telecommunication Union (ITU) has put the subjects of disaster prevention, preparedness and relief high on its agenda in an effort to *promote and offer technical assistance to developing countries in the field of telecommunications, and also to promote the mobilization of the material, human and financial resources needed for its implementation, as well as access to information.*[1]

For nearly 140 years, ITU has been helping the world communicate, a guiding mission that becomes even more important when disaster strikes.

"Working with our UN and Industry partners, ITU will continue to help strengthen local, national and global telecommunication systems in order that they can respond quickly and consistently in emergency situations."
Yoshio Utsumi, ITU Secretary-General

[1] Article 1 (1b), of the Constitution of the International Telecommunication Union, Collection of the basic texts of the International Telecommunication Union adopted by the Plenipotentiary Conference, 2003 edition.

ITU Communication Development and Disaster

The ITU Telecommunication Development Bureau is committed to helping countries prepare for disaster. This is done by:

- Ensuring disaster reduction strategies are part of their communication development plans
- Helping developing countries with emergency telecommunications during disasters
- Working with developing countries and the private sector to rebuild or develop communication systems that will bring the benefits of the information society to all

Satellite telephone equipment being used in a disaster
Source: INMARSAT.

A devastating earthquake hits Afghanistan
Source: IFRC.

Regulatory Reform and Disaster Relief

ITU is continuing to work with government and telecommunication regulators to establish regulatory frameworks that require operators to include disaster reduction features in their licensing regime. In order to facilitate this, each year ITU hosts a Global Symposium for Regulators, which brings together heads of national regulatory authorities from both developed and developing countries.

Existing national regulations covering the introduction and use of telecommunication equipment are not automatically waived in the event of a natural disaster. These regulatory barriers to the effective use of telecommunication resources in an event of disaster, include:

- Import or export of telecommunication equipment
- Use of telecommunication equipment or of radio-frequency spectrum
- Transit of telecommunication resources into, out of, and through of a third country

Work to remove such barriers has been hampered by the lack of an international legal instrument which can provide for the use of telecommunication equipment in the service of humanitarian assistance. More information about the life-saving "TAMPERE" convention can be found on page 10.

Telecentres

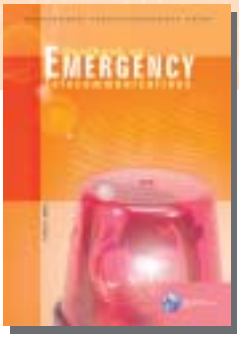
Providing a Community Focal Point for Communications in Disaster Relief

The International Telecommunication Union (ITU), in partnership with the United Nations High Commission for Refugees (UNHCR) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), has established a network of three multipurpose community telecentres (MCTs) in and around refugee camps along the northwestern border of Tanzania.

Refugees from Rwanda and Burundi, Mkugwa Camp, Kibondo, Tanzania
Source: UNHCR/L.Taylor.

The centres fulfil the health, education, information and communication needs of rural residents, relief workers and refugees, a majority of them from Burundi. Besides providing basic voice, fax and internet connectivity for refugees to contact relatives who have migrated overseas, the centres have served as educational centres for teacher training, as a provider of medical information; they also stimulate the development and growth of local businesses, as well as developing information and communication technology (ICT) skills among the local population.

Telecentres can serve the needs of displaced communities, the local community (including schools and local government) and international aid agencies. Telecentres provide an effective means of addressing the information and communication needs in the area, and ensure that the local community is not ignored, thus enhancing the capacity of the relief organizations to deliver services to the refugees.



Handbook on Emergency Telecommunications

ITU, together with the UN Working Group on Emergency Telecommunications (WGET) and the International Amateur Radio Union (IARU), has prepared a *Handbook on Emergency Telecommunications*. This publication combines information concerning disaster communications to evaluate, plan and conduct communications in the event of natural and man-made disasters. It provides an overview of the field of disaster communications by describing the various services and networks in telecommunications that are used to prevent, respond and mitigate disasters.

This Handbook is designed for persons who hold responsibilities connected with the planning, usage, evaluation or survey of disaster communication systems or their vulnerabilities.

ITU would also like to thank Rohde & Schwarz who have made a generous contribution towards the publication of this second edition of the Handbook.

Creating Quality Standards for Communications during Disasters

Through its work on standardization, ITU develops technical standards (known as recommendations) that facilitate the use of public telecommunication services and systems for communications during emergency, disaster relief and mitigation operations. This capability, referred to as the emergency telecommunication service, enables authorized users to organize and coordinate disaster relief operations as well as have preferential treatment for their communications via public telecommunication networks. This preferential treatment is essential as public telecommunication networks often sustain infrastructure damage which, coupled with high traffic demands, tends to result in severe congestion or overload to the system. In such circumstances, technical features need to be in place to ensure that users who must communicate at a time of disaster have the communication channels they need, with appropriate security and with the best possible quality of service.

Mother with a sick child consults a doctor via a webcam
Source: PhotoDisc.

As well as ITU's work in creating a protocol for the prioritization of calls, its existing standards have played an essential role in helping out in disaster zones worldwide. Telemedicine, for example, is made possible by using ITU's real-time multimedia standards, which allows for health-care workers to share patient information in order to access medical assistance from remote locations.

Keeping Signals Clear – Essential in Disaster Situations

New types of satellite-based equipment are being used by aid agencies to establish a communications base during a disaster

Source: ITU/INMARSAT.

HF and VHF radio equipment is one of the mainstays of international relief efforts. They are portable, reliable and disaster resistant.

Source: ITU/International Committee of the Red Cross/Lukas Fellman.

Relief workers communicate through satellite-based mobile handsets anywhere in the world

Source: Globalstar.

Through its work in radio communications, ITU is responsible for efficient spectrum management, which allows for the use of a variety communication services of such as the amateur radio service, radio and television broadcasting and mobile and portable satellite terminals.

As we go forward, efforts should centre on the identification of globally/regionally-harmonized bands, to the extent practicable, for the implementation of future advanced solutions to meet the needs of public protection agencies, including those dealing with emergency situations and disaster relief, and to make regulatory provisions, as necessary.

The Information Society and Disaster Reduction

The World Summit on the Information Society (WSIS), organized by ITU on behalf of the entire United Nations system, recognizes that natural disasters pose severe threats to development and that ICT applications are important in both disaster prevention and development. The WSIS Plan of Action specifically refers to the need to strengthen and expand ICT-based initiatives for providing medical and humanitarian assistance in disasters and emergencies and to establish monitoring systems, using ICTs, to forecast and monitor the impact of natural and man-made disasters, particularly in developing countries, LDCs and small economies.

Bridging the digital divide between developed and developing nations has special relevance in disaster reduction, as access to information by all citizens is the prerequisite for effective disaster prevention, mitigation and preparedness.

The WSIS Plan of Action seeks state-of-the-art solutions to harnessing the potential of the digital revolution to address global issues.

Heads of State at WSIS, 9 December 2003
Source: ITU/Jean-Marc Ferré.

The Tampere Convention – A Life-Saving Treaty

Victims of disasters should soon be able to benefit from faster and more effective rescue operations, thanks to the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations. The trans-border use of telecommunication equipment by humanitarian organizations has often been impeded by regulatory barriers that make it extremely difficult to import and rapidly deploy equipment without prior consent of the local authorities. The treaty simplifies the use of life-saving telecommunication equipment.

The Tampere Convention calls on States to facilitate the provision of prompt telecommunication assistance to mitigate the impact of a disaster, and covers both the installation and operation of reliable, flexible telecommunication services. Regulatory barriers that impede the use of telecommunication resources for disasters are waived. These barriers include the licensing requirements to use allocated frequencies, restrictions on the import of telecommunication equipment, as well as limitations on the movement of humanitarian teams.

The Convention describes the procedures for request and provision of telecommunication assistance, recognizing the right of a State to direct, control and coordinate assistance provided under the Convention within its territory. It defines specific elements and aspects of the provision of telecommunication assistance, such as termination of assistance. It requires States to make an inventory of the resources – both human and material – available for disaster mitigation and relief, and to develop a telecommunication action plan that identifies the steps necessary to deploy those resources.

Additional information about the provision of emergency telecommunications during relief operations can be found at www.reliefweb.int/telecoms/

The "Tampere Hall" in Tampere, Finland, where the treaty on Telecommunication for Disaster Mitigation and Relief was signed on 18 June 1998.
Source: ITU/P. Kuivanen.

Partnering for Disaster Reduction

Inmarsat II satellite
Source: INMARSAT.

The role of telecommunications in disaster reduction is critical in order to improve the timely flow of crucial information needed for appropriate assistance to be delivered before, during and after the disaster. For this reason, ITU has been vigorously forging partnerships with the private sector to finance activities related to disaster mitigation.

ITU and Inmarsat Limited partner to provide Satellite Services for Disaster Relief and Rural Telecommunications in Least Developed Countries
Source: ITU/Melissa Arditto.

Antenna of an amateur radio station on the ITU building roof in Geneva
Source: CERN.

Caption: A young Chinese student prepares electronic equipment for amateur radio purposes. Amateur radio operators are important players in disaster communication.
Source: Chinese Radio Sports Association.

ITU has entered into a partnership with Inmarsat Limited to obtain plug-and-play satellite terminals, which can be deployed at the request of a Member State whose telecommunications have been disrupted by disaster.

ITU works with the International Amateur Radio Union (IARU), a worldwide federation of radio amateurs that successfully interacts with the agencies responsible for regulating and allocating radio frequencies for the use of radio spectrum for disaster communications. The IARU is a Sector Member of ITU.

ITU is also part of the Working Group on Emergency Telecommunications (WGET), convened by the United Nations Office for Humanitarian Affairs (OCHA), which seeks to facilitate the use of telecommunications in the service of humanitarian assistance and to increase the effectiveness of its participants in relation to regulatory, operational and technical aspects of telecommunications for disaster relief. WGET not only encourages measures applying the ITU resolutions and recommendations relative to telecommunications for disaster relief, but also is an active facilitator of the promotion and implementation of the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.

Contact

International Telecommunication Union

Telecommunication Development Bureau

Emergency communications

Place des Nations

CH-1211 Geneva 20

Switzerland

Telephone: +41 22 730 5447

Fax: +41 22 730 5484

e-mail: cosmas.zavazava@itu.int

www.itu.int/itu-d/ldc/emergency_com.html

BDT – 01/2005